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DESIGN OF SPECTRUM LICENSING FOR MOBILE TELECOMMUNICATIONS SERVICE IN THAILAND

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ABSTRACT

In Thailand, the National Broadcasting and Telecommunications Commission (NBTC) is responsible for managing the spectrum for telecommunications services and regulating the telecommunications business in Thailand. The Master Plan for Telecommunications Services B.E. 2555-2559 (2012–2016) outlines a vision to "develop the telecommunications business, minimize the gap in access to information technology, enhance the country's competitiveness and upgrade Thai people's quality of life." In implementing the Master Plan, the NBTC has devised the regime for spectrum licensing, telecommunications service licensing, and the regulation of telecommunications businesses in Thailand. This paper aims to introduce the design of spectrum licensing and procedures for mobile telecommunications services in Thailand. Besides, it also describes the policy objectives for spectrum auctions, policy backgrounds, and regulatory issues for mobile telecommunications services.

KEYWORDS: Spectrum, Licensing, Auction, Mobile, Thailand

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Original Article

INTRODUCTION

The vagueness of the 900 MHz spectrum management policy has become a bone of deep-seated legal contention about whether it will be capable of being allocated through auctions or TOT will continue holding the right to use such spectrum after the concession expires.

Eventually, the Office of the Council of State had already come to a conclusion before the allocation of 900 MHz spectrum was conducted. It was identified that TOT, the state enterprise to which the spectrum had been allocated during the time when the Act on the Organizations to Assign Radiofrequency Spectrum and to Regulate the Broadcasting, Television Broadcasting, and Telecommunication Services B.E. 2553 (the NBTC Act 2010) was still enforced, granted a license authorized by the NBTC to use the 900 MHz spectrum to Advanced Info Service (AIS). In this regard, Section 84 Paragraph 4 of the NBTC Act 2010 [1] prescribes that "the NBTC shall specify a deadline for the spectrum assignees or spectrum users to return the spectrum as specified in the Master Plan on Spectrum Management, B.E. 2555 (2012)."

Based on this, Article 8.2.1 of such Master Plan introduces guidelines on spectrum refarming or utilization improvement [2] which states that "for the government sectors or state enterprises authorizing other operators to use the spectrum through granting a concession or other legal forms of license which have already been examined or authorized by the NBTC, must return the spectrum after the concession or license expires." Therefore, if the license made between TOT and AIS expires on 30 September 2015, the legal right of TOT to use

the 900 MHz spectrum will then be exhausted according to the Master Plan on Spectrum Management. Thus, TOT will have to return this particular spectrum to the NBTC for refarming or utilization improvement as specified in the Master Plan on Spectrum management since the day when the license has expired.

POLICY OBJECTIVES OF ETHE SPECTRUM AUCTION

The main objectives of spectrum allocation are based on the public interest and fair and free competition [3]. The NBTC has specified policy objectives of spectrum auctions for Thailand's telecommunications operations according to priority as follows:

- To allocate spectrum efficiently and to yield maximum benefits for the population as a whole
- To promote competition in the market, to improve the quality of services, and to reduce service costs for the sake of consumers as a whole
- To bring about transparency in auctions, including auction designing and auction conducting so as to make every party assent and accept the auctions' results
- To improve domestic telecommunications markets, including infrastructures and services so as to increase the potential to meet the growing needs of utilization in the future
- To serve the state with revenues through holding reasonable-valued auctions which bring about benefits to the state

In order to authorize any operator to use the spectrum in providing telecommunications services, three regulatory principles of equity must be realized so as to bring about the maximum benefits to the population and the nation as follows:

- The most efficient spectrum allocation: It must be realized that the spectrum is the public property and has to be allocated to the assignee being capable of producing the greatest benefits from spectrum utilization. An auction seems to be the most efficient mean of spectrum allocation as the top bidder will be the one making the most of spectrum utilization. Furthermore, the allocation of spectrum has to promptly meet the needs for utilization among both licensees and consumers.
- A free and fair competition: The regulation must create the environment and regulatory principles that facilitate new entrants as well as prevent typical operators from creating barriers to competition in the market. Besides, the regulation must be proportionate and does not cause too much of a burden to the licensee.
- State benefits which reflect the value of resources: The state will gain benefits from national resources in the form of state revenues through spectrum auctions, business operation taxes, and the resource allocation that yields benefits for the country's economic and social development.

LAW AND POLICIES, AND REGULATORY TRENDS

Allocation of spectrum for telecommunications operations and regulation of spectrum use are subjected to the Act on the Organization to Assign Radio Frequency and to Regulate the Broadcasting and Telecommunications Services B.E. 2553 (2010) [1] as described below.

Section 45: Any operators demanding for spectrum use in telecommunications operations must be licensed under

the Act by means of auctions according to the principles, methods, and conditions publicized by the NBTC. Hereby, the provisions of Paragraphs 4 and 7 of Section 41 must be applied mutatis mutandis and the net profit earned through auctions, after deducting all costs and losses, will be credited to public revenues.

Section 46: A spectrum license for telecommunications operations is the exclusive rights of the licensee and is non-transferable. The licensee authorized to use the spectrum for telecommunications services must operate the services by himself or herself. This whole or partial right to manage such services cannot be rendered or permitted to other to act on his or her behalf.

Section 47: Any authorized licensee who does not operate the telecommunications businesses by using such spectrum within the period specified by the NBTC, uses the spectrum in other services unrelated to the objectives, fails to comply with the business operation conditions, conducts prohibitive acts as specified in Section 27 (11): any act that monopolizes the market or gives rise to unfair competition in broadcasting, television, and telecommunications businesses, or fails to comply with the provision of Section 46, the NBTC shall take action to rectify the situation or issue an order to revoke the spectrum license in whole or in part.

THE LICENSE AND LICENSING PROCEDURE

- **The License and Scope of Authorized Operations**

When the top bidder has already complied with all pre-licensing conditions, the National Telecommunications Commission (NTC) will consider granting him or her a spectrum license and the third generation telecommunications license to operate telecommunications businesses under the scope of approval according to Section 7 of the Telecommunications Business Act B.E. 2544 (2001) [4].

- **Terms and Conditions Applicable to Permission to Use Spectrum**

The licensee has to strictly comply with all regulations and conditions of radio frequency spectrum utilization and telecommunications operation under the laws, rules, and regulations such as 1) the Act on the Organization to Assign Radio frequency and to Regulate the Broadcasting and Telecommunications Services B.E. 2553, 2) the Telecommunications Business Operation Act B.E. 2544, 3) the NBTC's declaration of International Mobile Telecommunications – IMT, 4) the terms and conditions applicable to a grant of the third generation telecommunications license as well as the rules, announcements, directives, provisions or any principle specified by the National Telecommunications Commission.

- **Coverage Obligation**

The licensee has to afford a network for proving services under the coverage obligation. Network preparations for providing services include constructing or renting telecommunications networks, but using national roaming services of other mobile phone operators.

- **Measures for Society and Consumer Protection**

    - The licensee must propose the Corporate Social Responsibility program – CSR of the organization that covers the issues of electronic waste management, health of service users, formulation of risk plans to deal with rapidly changing technologies, provision of services for disabled people to whom at least special rates of services must be offered, and the arrangement to have utility bills or service contracts prepared in large size

letters or Braille without additional charges. The licensee must submit the Corporate Social Responsibility program to the National Telecommunications Commission before providing services, and all activities under the program must be completed within 1 year from the first day of operation.

- The licensee has to propose the consumer protection program covering the issues of measures for free-of-charge complaint handling, measures for handling inappropriate services, processes of creating a common understanding about setting up radio communication stations among the population, the creation of awareness among service users about rights to use telecommunications services, including the declaration of consumers' rights to use mobile phone services as specified by the NBTC. The licensee must submit the consumer protection plan before providing services and must comply with all activities under the plan immediately since the first operation of services.

Execution Procedures

The execution to permit the use of spectrum can be classified into 6 major phases as shown by table 1.

Table 1: Licensing Phases

1) Regulations Preparation	• **Propose the regulatory Bill for permission to use spectrum.** • **Propose the Bill for Information Memorandum (IM).** • **Announce the principles applicable to permission to use spectrum in the Royal Thai Government Gazette.**
2) Auction Invitation	• Send invitations and publicize IM documents. • Provide people interested in auctions with necessary information.
3) Pre-Qualification	• Follow the procedures for license application. • Consider the qualifications of license applicants.
4) Auction Training	• Hold a Bidder Information Session and a Mock Auction.
5) Auction	• Carry out a spectrum auction.
6) Licensing	• Comply with all pre-licensing conditions. • Grant a license.

PROCEDURES AND RULES FOR SPECTRUM AUCTIONS

- **The Spectrum Putting Up for Auctions and the First Round Price**

Regarding spectrum auctions, the National Telecommunications Commission specifies that an auction must be conducted by means of the simultaneous ascending bid auction which allows auction participants to place or withdraw bids at the same time, in multiple rounds, and with improving bids in each round. The auction participants will place a bid for the spectrum of interest [5]. The 900 MHz spectrum to be auctioned in this particular round comprises two spectrum lots. For the first auction round, the auction participants have to place a bid on any of the spectrum lots [6]. In this regard, the spectrum to be auctioned and the first round price are shown in table 2 below.

Table 2: The Spectrum to be Auctioned and the First Round Price

Spectrum Lot	Frequency Band	Minimum Price	First Round Price
Lot 1	f_1-f_2 / f_3-f_4	X	Y
Lot 2	f_5-f_6 / f_7-f_8	X	Y

Auction Rounds

In a spectrum auction, auction participants will keep track of auction rounds through the auction program comprising the 3 following stages:

- **Stage of Placing A Bid**

Each round of the auction begins with the stage of placing a bid which takes about 15 minutes. The bidders may place a bid on a spectrum lot during this period.

- **Stage of Assessing Bid Results**

The assessment of bid results will start after the stage of placing a bid has already been completed.

- **Stage of Announcing Bid Results**

This stage marks the announcement of bid results. Here, the auction participants will get informed about an offered price for each of the spectrum lots being put up for the next auction rounds and other necessary information, five minutes before the next auction round starts.

PROCESSES OF SPECTRUM AUCTIONS

First Auction Round

Every auction participant must place a bid on any of the spectrum lots over the price set by the National Telecommunications Commission. The criteria for selecting the provisional winner for each of the spectrum lots [6] are shown in table 3 below.

Table 3: Criteria for Selecting the Provisional Winner for Each of the Spectrum Lots

Case	Criterion
1) There is only one auction participant placing a bid.	The participant is considered a provisional winner.
2) There are more than two auction participants placing a bid.	The provisional winner will be determined by random, out of all the participants placing a bid on the same spectrum lot.
3) There is no bid placed on any spectrum lot.	There will be no provisional winner for that particular spectrum lot.

Furthermore, during the first auction round, all auction participants have no opportunity to exercise the right to waive bidding. In case the participant have not yet placed a bid on any spectrum lot, it will be assumed that such particular participant fails to comply with the conditions of spectrum auctions, affecting their condition of auction participants to be exhausted. As a result, the National Telecommunications Committee shall reserve the right to confiscate the performance bond of that particular auction participant.

From the Second Auction Round Onwards

- In each auction round, the participants must comply with the following regulations:
- In case the auction participant is the provisional winner for any spectrum lot, he or she may increase the bid for the spectrum lot where he or she was announced as the provisional winner in the next round. If not, it is assumed that he or she insists to place the same bid.

- In case the auction participant is not the provisional winner for any spectrum lot. He or she must carry out each of the following acts:
- Place a bid on any of the spectrum lots.
- Exercise the right to waive bidding.

If the auction participant fails to comply with the aforementioned specifications and has no right to waive bidding left, the rights to place a bid in the next round of such particular auction participant will be exhausted implicitly.

- In case the auction participant is not the provisional winner and has left with the right to waive bidding. He or she may exercise such right, but the right will be exhausted if the participant fails to place a bid in the next consecutive rounds.
- The criteria for selecting the provisional winner for each of the spectrum lots are shown in table 4 below

Table 4: Criteria for Selecting the Provisional Winner for Each of the Spectrum Lots from the Second Auction Round Onwards

Case	Criterion
1) There is only one auction participant placing a bid.	It is assumed that the participant is the provisional winner.
2) There are more than two auction participants placing a bid.	The provisional winner will be determined by random, out of all the participants placing a bid on the same spectrum lot.
3) No bid is placed, but there is a provisional winner for that particular spectrum lot.	It is assumed that the provisional winner for that particular spectrum lot still maintains the same status.
4) There is no bid placed on any spectrum lot and a provisional winner.	There will be no provisional winner for that particular spectrum lot.

- **Right To Waive Bidding**
  - Each of the auction participants is able to exercise the right to waive bidding only three times throughout the auction. For the first auction round, each participant is not allowed to exercise such right and must place a bid on any of the spectrum lots. For the second and the next auction rounds, the participant announced as the provisional winner is not allowed to exercise the right to waive bidding.
  - From the second auction round onwards, the participants who were not announced as the provisional winner and still hold the right to waive bidding are able to exercise such right through the following two methods:
- Claim the right to waive bidding or
- Do not place a bid within the period specified in 2.1. Accordingly, the right to waive bidding will be exercised automatically.

As a result, the auction participant who was not announced as the provisional winner and still holds the right to waive bidding can claim such right. By doing this, the bidding right and the right to waive bidding of such auction participant will be exhausted in the next rounds.

DISCLOSURES

During the stage of announcing bid results for each of the auction rounds, a participant will get informed about the following information: 1) the offered price for each spectrum lot in the next auction round, 2) the number of bidding times of each spectrum lot in the auction round which has just ended, 3) the spectrum lot where the participant was announced as the provisional winner, 4) the number of rights to waifve bidding the participant has left.

Exhaustion of Auction Rights

The auction rights of auction participants will be exhausted in the following cases:

- In case the participant did not place a bid on any spectrum lot during the first auction round, he or she will be considered unable to comply with the auction conditions. This affects his or her condition of an auction participant to be exhausted.
- From the second auction round onwards, in case the auction participant who is not announced as the provisional winner for any spectrum lot fails to comply with the specifications of spectrum auctions and has no right to waive bidding left, it will be assumed that his or her right to place a bid in the next auction round has been exhausted.
- From the second auction round onwards, if the auction participant who is not the provisional winner and still holds the right to waive bidding claims the right to waive bidding, the right to place a bid and the right to waive bidding of such participant will be exhausted.

Completion of Spectrum Auctions

The spectrum auction will end when there is a round in which no participant improves the bid for any spectrum lot and there is not any participant claiming the right to waive bidding. The provisional winner for each spectrum lot, then, becomes the winning bidder of that spectrum lot at the end of the final round. The auction will end only if the winning bidder sign the name to guarantee the last bid price placed by him or her. Then, the National Telecommunications Commission will announce the auction result on the day when the auction ends [6].

Reservation of Right Clauses

In case of force majeure or other necessities which obstruct the conducting of spectrum auctions under the auction rules specified, the National Telecommunications Commission shall reserve the right to make changes to the auction methods, processes, procedures, and rules as well as stop, pause or abort auction procedures.

CONCLUSIONS

The efficient regulation of telecommunications operations requires successful spectrum licensing execution in the same fashion as the efficient regulation of the mobile phone industry which is getting more competitive every day. A fair competition in spectrum allocation gives rise to more investments in new technologies and promotes appropriate spectrum allocation according to the market-based approaches. When the spectrum license has been issued and the demand is greater than the spectrum supply, the allocation of spectrum in the light of the National Telecommunications Commission is considered taking significant part in successfully spectrum licensing. In particular, the National Telecommunications

Commission, of which all activities are subjected to the government policies, is responsible for regulating, issuing 3G and 4G licenses [6] [7], and examining mobile phone networks according to the license conditions such as the coverage or roll-out requirements for every spectrum. The spectrum bands available for mobile phone services under the licensed regime, such as 2G, 3G or 4G LTE, can be more easily manipulated than those under the concession regime.

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